

The Hindu Important News Articles & Editorial For UPSC CSE

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—It's about quality—

To mark 75 years of India's Republic, President Droupadi Murmu curated a special invitation box featuring crafts from five southern states, highlighting India's rich cultural heritage.

President Murmu's invite for this year's Republic Day reception set to honour crafts from South

Nistula Hebbar
NEW DELHI

A stiff white card embossed with the Lion Capital of Ashoka is the usual format of the invitation card sent out for the customary "At home" reception held at Rashtrapati Bhavan on Republic and Independence Day. This year, however, to mark 75 years since the formation of the Republic of India, things are different.

In a departure from convention, invitees for the "At home" will receive a specially curated box of craftwork from the five southern States – Tamil Nadu, Kerala, Karnataka, Telangana, and Andhra Pradesh – along with the card.

The idea of this special

box, packed with symbolic meaning, was floated by President Droupadi Murmu herself, and executed by Rashtrapati Bhavan, with the support of the National Institute of Design (NID), which has campuses in Ahmedabad and Bengaluru (where President Murmu is a Visitor).

"The idea behind the artefacts in the invitation box is the 5,000-year civilisational history of Bharat, with the underlying message of sustainability and colour schemes that invoke the 75 years of the forming of the Indian Republic," Rashtrapati Bhavan officials told *The Hindu*. The craft products in the invitation box are all made in the southern States, have GI (geographi-

Art in a box

President Droupadi Murmu's guests are set to receive a gift box containing the best of south India's GI-tagged crafts. **Here are some products featured in the hamper:**



Pochampally Ikat on a pencil pouch: This Telangana staple is known for its distinct geometric patterns and bold colours



Etikoppaka toys: The soft wood and lacquer toys from the eponymous village in Andhra Pradesh are valued for the use of natural dyes and themes depicting everyday life



Kalamkari on bamboo: These goodies will arrive in a bamboo box decorated with Kalamkari motifs, pen-drawn with natural dyes



Kanchipuram silk as a pouch: The handloom silk, world renowned for its richness and elegance, makes its way from Tamil Nadu

cal indicator) tags, and are drawn from the "One District One Product" scheme.

According to NID Ahmedabad director Ashok Mondal, the curation and even the crafting was done in

the institute's Bengaluru campus, with craftsmen from five States still hard at work there.

The craft elements will be packed in a box made of bamboo weave with Kalamkari paintings on it done by Nimmalakuanta artisans. The box will include an Ikat-Pochampalli cover that can be used even after the box has been dismantled, a fridge magnet depicting Mysore's Ganjifa art, usually seen in the famous Ganjifa playing cards, and a handmade pouch of Kancheevaram silk from Tamil Nadu. "Etikoppakka dolls from Andhra Pradesh are included, along with a bookmark made of screw-pine leaves woven by artistes from Kerala," he added.

Kalamkari Paintings

- Kalamkari is a traditional hand-painted or block-printed textile art.
- The paintings often depict mythological themes and nature-inspired motifs.
- Nimmalakuanta artisans, known for their intricate work, create these paintings.
- They are made using natural dyes and a painstaking, detailed process.

Ikat-Pochampalli Cover

- Ikat is a resist-dyeing technique used to create unique patterns on fabric.
- Pochampalli is a renowned weaving tradition from Telangana.
- The cover is crafted with bright, geometric patterns typical of this art form.

- The fabric is durable and reusable, promoting sustainability.
- The Ikat-Pochampalli cover adds elegance and cultural significance to the box.

Ganjifa Art Magnet

- Ganjifa art originates from Mysore and is inspired by traditional playing cards.
- It features intricate designs and motifs, often hand-painted.
- The art depicts cultural and mythological themes in vibrant colors.
- It showcases the artistic heritage of Karnataka.

Kanjeevaram Silk Pouch

- Kanjeevaram silk is a traditional handwoven silk from Tamil Nadu.
- Known for its vibrant colors and rich textures, it is widely admired.
- The silk is woven using pure mulberry silk and gold zari threads.
- It represents the exceptional craftsmanship of Tamil Nadu.

Etikopakka Dolls

- Etikopakka dolls are traditional wooden toys made in Andhra Pradesh.
- They are crafted using soft wood and lacquer derived from natural dyes.
- These toys are eco-friendly and safe for children.
- Each doll is handcrafted with attention to detail and design.
- They are a reflection of Andhra Pradesh's artisan heritage.

Screwpine Leaf Bookmark

- It symbolizes Kerala's rich tradition of natural fiber weaving.
- Screwpine leaves are woven to create fine handicrafts in Kerala.
- The craft involves drying, slicing, and weaving the leaves into intricate patterns.
- Artisans create durable and sustainable products using this material.

Former U.S. President Donald Trump was found guilty of hiding hush money payments but faced no punishment, becoming the first convicted President-elect.

Trump sentenced in hush money case

U.S. President-elect gets an unconditional discharge, New York judge spares Trump prison term or fine | He will become the first felon in the White House; calls it a 'setback for the New York court system' | Outside the courthouse, Trump supporters held giant banner emblazoned with their idol's name

Agence France-Presse
NEW YORK

A judge sentenced Donald Trump to an unconditional discharge on Friday for covering up hush money payments to a porn star despite the U.S. President-elect's efforts to avoid becoming the first felon in the White House.

The judge spared Mr. Trump prison or a fine even though the 34 counts of falsifying business records on which he was convicted in May 2024 carried potential jail time. Instead New York judge Juan Merchan handed down the mildest criminal sanction available, an unconditional discharge – a relatively uncommon measure.

"Never before has this court been presented with such a unique and remarkable set of circumstances," Mr. Merchan said. "The only lawful sentence that permits entry of a judgment of conviction without encroaching on the highest office of the land is an unconditional discharge."

Mr. Trump attended his sentencing virtually, with the judge, lawyers and media packed into the scruffy Manhattan courtroom that was the backdrop to the trial's high drama, legal wrangling and vitriolic personal attacks by the divisive Republican.

"Terrible experience"
"This has been a very terrible experience. I think it's been a tremendous setback for New York and the New York court system," Mr. Trump said before the discharge was passed. "It was done to damage my reputation, so I would lose the election."

"Terrible experience"

Ahead of the sentencing, prosecutor Joshua Steinglass said Mr. Trump



Case closed: Donald Trump and attorney Todd Blanche appear virtually before judge Juan Merchan for the sentencing hearing. AP

had been convicted of a "premeditated and continuous deception". "The verdict in this case was unanimous and decisive and it must be respected."

The trial saw Mr. Trump forced to look on as a string of witnesses testified that he had fraudulently covered up illicit payments to porn star Stormy Daniels in an effort to stop her dis-

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closing their tryst ahead of the 2016 presidential election, which he ultimately won.

Mr. Trump had sought a suspension of the criminal proceedings after a New York State appeals court dismissed his effort to have the hearing delayed.

However, the Supreme Court ruled that the sentencing could proceed.

Prosecutors opposed the effort to stave off sentencing, 10 days before Mr. Trump is due to be sworn in for a second term, arguing it was wrong for the apex court to hear the case when the mogul still had avenues of appeal to pursue in New York.

First convicted felony

An unconditional discharge is a measure without any sanctions or restriction that nonetheless

upholds the jury's guilty verdict – and Mr. Trump's infamy as the first former President to be convicted of a felony.

The 78-year-old had potentially faced up to four years in prison.

"He's sticking his middle finger at the judge, the jury, the system of justice, and laughing," said Pace University law professor and former prosecutor Bennett Gershman ahead of the sentencing.

Outside the courthouse, Trump supporters held a giant banner emblazoned with their idol's name that was buffeted by high winds. There was also a small vigil of anti-Trump demonstrators behind a hoarding reading "Trump is guilty".

Mr. Trump's counsel had argued sentencing should have been postponed while the Republican appealed his conviction, but New York state Associate Justice Ellen Gesmer rejected that on Tuesday.

Mr. Trump repeatedly called the prosecution a "witch hunt" which Mr. Steinglass said was "designed to have a chilling effect".

"This defendant has caused enduring damage to public perception of the criminal justice system," the career prosecutor said.

Mr. Trump's lawyer Todd Blanche said he "very, very much disagree with much of what the [prosecution] just said".

Mr. Trump was certified as the winner of the 2024 presidential election on Monday, four years after his supporters rioted at the US Capitol as he sought to overturn his 2020 defeat.

Hush Money Case:

- Donald Trump was convicted in May 2024 for hiding hush money payments to an adult film actress.
- The payments were made to stop the actress from talking about their alleged affair before the 2016 election.
- He was sentenced to an unconditional discharge, meaning he was guilty but received no jail time or fine.
- This made Trump the first US President-elect to be convicted of a felony.
- The judge explained that this punishment avoided interfering with Trump's presidential duties.
- Trump attended the sentencing virtually and called the case a "witch hunt" aimed at harming his reputation.
- Prosecutors argued that Trump's actions were a deliberate attempt to deceive and damage trust in the justice system.

In 2024, global temperatures surpassed 1.5°C above pre-industrial levels, signaling a climate crisis, with urgent calls for emissions reductions and financial support for vulnerable nations.

2024 was the first year to breach global warming limit, show data

It is the first time that mean temperature crossed the threshold of 1.5 degrees Celsius above pre-industrial levels, says global body; experts say that given the high rate of carbon emissions, the 2024 temperatures represent a point of no return

Jacob Koshy
NEW DELHI

Humanity has stepped into a future that climate scientists for decades have warned about. Temperature data made public on Friday by the Copernicus Climate Change Service (C3S), an authoritative source on historical trends in climate, show that 2024 was the first year in history when mean global temperature went 1.5 degrees Celsius above the pre-industrial level.

Annual climate conferences, or the Conference of Parties convened by the United Nations, are about getting world leaders to agree on measures to curb emissions to keep temperatures from going over 2 degrees Celsius above the temperature in the 1850-1900 pre-industrial period and “as far as possible” keeping it below 1.5 degrees Celsius.

Consistent rise

The way climatological boundaries are determined, a single year in the red doesn't by itself spell catastrophe. Only when temperatures consistently



Scorching heat: Each of the past 10 years was one of the 10 warmest years on record. FILE PHOTO

breach the 1.5 degrees Celsius mark for a decade or two would a boundary considered to have been breached. However, experts say that given the high rate of carbon emissions at present, the 2024 temperatures represent a point of no return.

“While there may be year to year variability, an El Nino in some years or a major volcanic eruption in others might influence temperatures, this suggests that there is no going back and that we are on a trajectory on exceeding 2 degrees Celsius by 2050,” Roxy Mathew Koll, climate scientist, Indian Institute of Tropical Meteorology, Pune, told *The Hindu*.

At an average temperature of 15.1 degrees Celsius, 2024 was the warmest year in global temperature records, which go back till 1850, and was 0.72 degrees Celsius above the 1991-2020 average. It was 0.12 degrees Celsius above the average of 2023, the previous warmest year on record. It was also 1.6 degrees Celsius above an estimate of the 1850-1900 temperature designated to be the ‘pre-industrial’ level. Each of the past 10 years (2015-2024) was one of the 10 warmest years on record.

For 11 months in 2024, the monthly global average temperature exceeded 1.5 degrees Celsius above

pre-industrial levels.

In 2024, the annual average sea surface temperature (SST) over the extra-polar ocean reached a record high of 20.87 degrees Celsius, 0.51 degrees Celsius above the 1991-2020 average.

The average extra-polar SST was at record high levels for the time of year from January to June 2024. From July to December 2024, the SST was the second warmest on record for the time of year, after 2023.

Among the reasons for the record-breaking temperatures in 2024 was the El Nino, which is warming of the Central Equatorial Pacific, that began in June 2023 with effects lasting well into 2024.

‘Serious implications’

“A single year with temperatures 1.5°C above pre-industrial levels does not mean we’ve reached 1.5°C of global warming. However, it does mean we’re getting dangerously close. Every fraction of a degree – whether 1.4, 1.5, or 1.6°C – brings more harm to people and ecosystems, underscoring the continued need for ambitious emis-

sions cuts,” Professor Joeri Rogelj, Director of Research at the Grantham Institute - Climate Change and Environment, Imperial College London, said in a statement.

Other experts referred to the latest, failed talks at Baku, Azerbaijan, where countries couldn’t bring themselves to agree on a financial package that would realistically account for the costs of mitigating runaway carbon emissions.

“The year on year increase in average global temperature has serious implications for developing economies reeling under frequent climate disasters. This, coupled with the failure of COP29 to deliver on meaningful finance, only implies that developing economies will have to allocate more funds to deal with climate impacts and disasters in the future. Mitigation ambition of the developing world would be hit hard, unless fast and meaningful action happens on the carbon markets front,” said Vaibhav Chaturvedi, Senior Fellow, Council of Energy, Environment and Water (CEEW).

Humanity's Shift Towards Climate Crisis

- 2024 marked the first year when the global mean temperature exceeded 1.5°C above pre-industrial levels, as reported by the Copernicus Climate Change Service (C3S).
- This is a significant milestone in global warming, aligning with concerns raised at global climate conferences where leaders aim to limit warming to below 2°C, ideally staying under 1.5°C.

Annual Climate Conference Goals

- The primary objective of annual climate conferences is to establish global agreements to reduce carbon emissions and slow temperature increases.
- The ultimate goal is to prevent global temperatures from exceeding 2°C above pre-industrial levels, with the ideal target of limiting the rise to below 1.5°C to mitigate the most severe climate impacts.

Temperature Thresholds and Significance of 2024

- While surpassing the 1.5°C threshold in a single year does not signal an immediate climate catastrophe, experts warn that continued warming over a decade or more could result in permanent changes.
- The year 2024 is seen as a critical turning point. With rising carbon emissions, experts predict that global temperatures may surpass the 2°C mark by 2050, leading to devastating consequences.

Record-Breaking Global Temperatures in 2024

- 2024 has been recorded as the warmest year in history, with the global average temperature reaching 15.1°C, 0.72°C above the 1991–2020 average and 1.6°C above pre-industrial levels (1850–1900).
- The past decade (2015–2024) saw each year among the ten warmest on record, signaling a worrying trend.
- The global temperature in 2024 consistently stayed above 1.5°C for 11 months, highlighting a worrying trajectory.
- Sea Surface Temperature and El NiñoThe average sea surface temperature (SST) in 2024 reached a record high of 20.87°C, 0.51°C above the 1991–2020 average.
- The period from January to June 2024 saw SSTs at record levels, while July to December followed closely as the second warmest on record, largely due to the ongoing El Niño event that started in June 2023.

Implications of Record Temperatures

- ▶ Exceeding 1.5°C in 2024 signifies the world is perilously close to irreversible climate impacts.
- ▶ While a single year above this threshold is not conclusive, it underscores the urgency for swift and meaningful emissions reductions to avoid exacerbating the harm to ecosystems and human populations.

Concerns Over Financial Support and Climate Disasters

- ▶ The rising temperatures have serious consequences for developing economies, which are already grappling with frequent climate disasters.
- ▶ The failure of climate talks in Baku, Azerbaijan, to agree on a financial package for carbon emission mitigation worsens concerns, as developing countries now face more financial strain in addressing climate impacts.
- ▶ This failure delays action on carbon markets, threatening to undermine efforts for sustainable development in these vulnerable regions.

USPC Mains PYQ : 2022

Ques : Discuss global warming and mention its effects on the global climate. Explain the control measures to bring down the level of greenhouse gases which cause global warming, in the light of the Kyoto Protocol, 1997. **(250 Words /15 marks)**

Donald Trump proposes a significant increase in NATO members' defence spending to 5% of GDP, sparking debates about feasibility amid security concerns, particularly over Russia's actions.

NATO members reluctant to endorse Trump's defence spending proposal

The U.S. President-elect said members of the military alliance should spend 5% of gross domestic product on defence - a huge increase from the current 2% goal and a level that no NATO country currently reaches; a new target is likely to be agreed at a NATO summit in The Hague in June

Reuters
BRUSSELS

NATO won't heed Donald Trump's proposal for a massive hike in defence spending but will likely agree to go beyond its current target, according to officials and analysts.

The U.S. President-elect declared on Tuesday members of the military alliance should spend 5% of gross domestic product (GDP) on defence - a huge increase from the current 2% goal and a level that no NATO country, including the United States, currently reaches.

Mr. Trump's comments - at a press conference that also generated a blizzard of headlines on Greenland, Canada and Panama - were a reminder of his focus on NATO spending during his first term and his threats not to protect allies that fail to meet the target.

Politically impossible

Officials from NATO countries said they agreed defence spending needs to rise further but did not endorse the 5% figure, which analysts said would be politically and economically impossible for almost all members. It would require hundreds of billions of dollars in extra funding.

However, a new target is likely to be agreed at a NATO summit in The Hague in



Joint effort: The U.S. flag alongside the NATO flag outside the Eisenhower Executive Office Building in Washington, U.S. REUTERS

June, spurred by fears that Russia may attack a NATO country after Ukraine and by Mr. Trump's exhortations, officials said.

The key open questions are what that new target will be and whether it will be enough to satisfy Mr. Trump.

Some expect NATO's 32 members to agree, after much wrangling, to a target of around 3% of GDP. But even that would be a stretch for many, who barely meet or fall short of the 2% goal now - a decade after it was set.

"It seems there will be a shift," Italian Defence Minister Guido Crosetto said. "I don't think it will be 5%, which would be impossible

for almost every nation in the world right now but... it will not be two [percent], which we are already struggling to reach, but it will be more than two."

Italy, with defence spending at around 1.5% of GDP, is among eight NATO members that do not meet the current target.

Poland, which borders Ukraine, is the NATO member that spends the highest share of GDP on defence - 4.12% last year, alliance estimates show. It is followed by Estonia with 3.43% and the United States with 3.38%.

NATO estimated the combined defence spending of its members at \$1.474 trillion in 2024 - around

\$968 billion from the United States and \$507 billion from European nations and Canada.

The overall average is about 2.71% of NATO GDP.

Some officials and analysts see Mr. Trump's 5% suggestion as a deliberately high opening bid to kick off months of negotiations and expect he may settle for something closer to 3%.

During last year's U.S. presidential election campaign, Mr. Trump proposed a 3% target, adding this would mean a defence budget increase of about 30% for most NATO countries.

Spending surge

Shocked by Russia's war in

Poland, which borders Ukraine, is the NATO member that spends the highest share of GDP on defence - 4.12% last year, alliance estimates show

Ukraine, many European countries have ramped up defence spending in recent years.

But with public finances tight, and defence spending not politically popular in some countries, it would not be easy for governments to find the extra billions that even a move to spend 3% of GDP on defence would entail.

While Mr. Trump has likened NATO defence spending to alliance membership fees, they reflect budgets set by national governments.

Fenella McGerty, a defence economics expert at the International Institute for Strategic Studies think tank, said recent increases had been "remarkable" but it takes years for countries to start reaching new targets.

"Even if Europe were to continue that rate of quite extraordinary growth - in excess of 10% in real terms in 2024 - it would still take another 10 years to even get to 3% of GDP," she said.

However, many European governments say the

continent should do more to defend itself and rely less on the United States.

France and the Baltic states are pushing for joint European Union borrowing to fund defence spending. The outcome of that debate may depend on next month's national election in Germany, which has so far opposed the idea.

To become more self-reliant, the European allies need to spend more to develop capabilities that the U.S. currently provides such as air-to-air refuelling, heavy-duty military air transport and electronic warfare, said Camille Grand, who previously served as NATO's top official for defence investment.

"All of these things cost a lot of money. Some of them are big-ticket items," said Grand, now with the European Council on Foreign Relations think tank.

The current security environment suggests European countries should be spending about 3% of GDP on defence, she said.

Marie-Agnes Strack-Zimmermann, chair of the European Parliament's defence subcommittee, said Europe must ramp up spending but not fixate on an arbitrary figure.

"We need to mobilise a lot more money, but we shouldn't let Trump drive us crazy," she said.

Proposal for NATO Defence Spending Increase:

➔ **Trump's Proposal:**

- U.S. President-elect Donald Trump proposed that NATO countries should raise their defense spending to 5% of their GDP.
- This would be a significant increase from the current target of 2%, which no NATO member, including the United States, currently meets.

➔ **Political and Economic Challenges:**

- NATO officials acknowledged the need for increased defense spending, but expressed that the 5% target would be politically and economically unfeasible for most members.
- Reaching such a target would require hundreds of billions of dollars in additional funding, which is deemed unrealistic for many nations.

➔ **Expected Outcome:**

- A new defense spending target is expected to be set at the NATO summit in The Hague in June.
- The new target is likely to be around 3% of GDP.
- Even this figure presents challenges for several NATO members, with some struggling to meet the existing 2% target.

➔ **Rationale for Increased Spending:**

- The push for higher defense spending is in response to Russia's aggression in Ukraine and broader security concerns.
- There is also an increasing push to reduce reliance on the United States for NATO's defense capabilities.

➔ **European Concerns:**

- Proposals include joint EU borrowing to fund military capabilities, aiming to strengthen Europe's defense capacity independently.
- While European countries agree on the need for increased defense spending, they are also advocating for more self-reliance in defense matters.

In News : Maha Kumbh Mela

- ➔ The Maha Kumbh Mela, one of the largest religious gatherings globally, is scheduled to take place from January 13 to February 26, 2025, at Prayagraj (Allahabad).



Analysis of the news:

Key Takeaways

1. Spiritual Significance

- The Maha Kumbh Mela is deeply rooted in Hindu beliefs, offering devotees the opportunity to absolve sins and attain Moksha (liberation).
- It is considered auspicious due to planetary alignments that enhance spiritual energy, making it a transformative event for spiritual practices.

2. Historical Foundations

- The festival is tied to ancient mythology, particularly the Samudra Manthan (churning of the ocean) story, where drops of Amrita (nectar) fell at the four Kumbh Mela sites.
- References in the Mahabharata and Puranas add a mythical charm to its origins.

3. Cultural Relevance

- The Sangam (confluence) of the Ganga, Yamuna, and Saraswati rivers at Prayagraj is the festival's focal point.

- Rituals performed here are believed to cleanse sins and grant spiritual freedom, fostering unity among diverse communities.

4. Modern Relevance

- Beyond its religious importance, the Kumbh Mela remains a symbol of cultural heritage, spirituality, and universal harmony, bringing together people across backgrounds for shared pursuits of peace and devotion.

► Key Rituals

- **Shahi Snan (Royal Bath):** Led by ascetic groups like Naga Sadhus, this ceremonial dip in holy rivers is the highlight, symbolizing spiritual purification.
- **Sankirtan and Bhajans:** Devotional songs and chants create a vibrant spiritual ambiance.
- **Yoga and Meditation:** Visitors engage in practices for physical and mental well-being.
- **Spiritual Discourses:** Renowned saints deliver teachings on philosophy and spirituality.

India's journey so far on the AI military bandwagon

As the world has begun utilising and developing artificial intelligence (AI) for military purposes amidst debates of ethical concerns, India also appears to have hopped on the bandwagon. Last year saw a defence Budget of ₹6.21 lakh crore (\$75 billion), with an emphasis on modernising and upgrading India's military. India has begun to make strides towards integrating AI systems with their military and using them across various systems. Products such as the Indrajaal autonomous drone security system have been developed. India has also attracted investments from numerous foreign tech giants for its AI ecosystem – Microsoft, for example, has committed approximately \$3 billion to building data centres in Telangana.

On track but there are hurdles

Multiple government figures have made statements about the utility of AI for military purposes, including Union Defence Minister Rajnath Singh, who remarked that “artificial intelligence or AI has the potential to revolutionize military operations, from predictive analytics to autonomous decision-making systems”.

Additionally, India is a part of multiple joint initiatives internationally that focus on AI. All these steps indicate the pouring of money and manpower into developing AI systems for military purposes. India is on track to fully utilising the potential of AI. However, there are some obstacles. Once addressed, they will ensure that India's adoption of AI will be even better.

A lack of digitised data to train systems on as well as a dearth of funds are the obvious factors. The biggest issue is the fact that the data centres required to run AI systems are expensive. India's military already has to focus on replacing legacy systems such as older aircraft with newer models, which is an expensive endeavour in itself. India's legacy hardware is no longer competitive in the global sphere, and significant resources are being directed towards replacing and upgrading it.

However, more general hurdles which are



Adya Madhavan

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Institution

India has begun harnessing AI's potential to strengthen its defence ecosystem, but there are still significant impediments

harder to overcome exacerbate the problem. One such issue is that India's policies on AI are still fragmented or lack guidelines for implementation. For instance, the National Strategy for Artificial Intelligence outlines India's vision for deploying AI. However it provides little insight on actual mechanisms for deployment.

Similarly, the responsible AI for All paper outlines the importance of accountability and transparency and puts forward principles for responsible AI use, but falls short in making military-AI-specific recommendations. Major strides have been made through these documents, but, as of now, arguably more robust frameworks need to be put in place for the deployment and the regulation of AI in the military. The Defence Artificial Intelligence Council (DAIC) and the Defence AI Project Agency (DAIPA) have been set up, and their objectives will bridge these gaps. However, there have not been any recent updates available to the public from these bodies.

The international picture

AI is also a technology that is a must based on the alacrity with which other countries have been focusing on integrating it with their militaries. Israel and China have focused on rapidly developing and deploying military AI and their technologies are already far ahead. India needs clarity of vision in its attitude towards AI, to make it possible to roll out AI systems faster and catch up with the global AI wave. There appears to be some degree of inconsistency within the government regarding sentiments towards military AI. This is reflected in remarks made by notable figures that underscore resistance or mistrust regarding the new technology. For example, the Minister of External Affairs compared AI to nuclear weapons – AI will be as dangerous for the world as nuclear bombs once were” – in terms of their potential dangers to the world.

During the Global Partnership on Artificial Intelligence (GPAI) in 2023, the Prime Minister

also remarked that there must be a focus proceeding with extreme caution and warned of the darker sides of AI. While there is clarity on the fact that AI will be critical in the coming years, especially military AI, there appears to be less clarity on how to roll it out.

The specific problems in India

One of the biggest challenges that must be addressed, even when India is at the stage where technologies are ready to be widely deployed, is the historically siloed nature of the armed forces. The Indian Army, Indian Navy, and Indian Air Force have separate doctrines, systems and communication practices. This will likely significantly hinder interoperability and the procurement of systems for joint operations.

Finally, when it comes to the procurement of systems themselves, one of the issues with developing AI for defence is the reliance on public sector units (PSU), which has prevailed in India for many decades. Despite the misconception that most of India's defence manufacturers are public sector companies, many private entities and startups produce advanced, high-quality systems. To equip the military with the best systems at a large enough scale, there will have to be public-private partnerships (PPPs) or an introduction of private competition. As seen with the space sector, this can significantly change the state of affairs.

India has already begun harnessing AI's potential to bolster its defence ecosystem. However, these multiple impediments serve as a reminder of the measures that need to be taken. Strategic alignment is paramount, and robust frameworks and policies are necessary to ensure AI's effective and ethical deployment. India needs to make systemic changes to tackle issues such as the inter-service silos and an overreliance on PSUs. Finally, collaboration and innovation internationally and in terms of PPPs will accelerate AI adoption and innovation. With a cohesive strategy, India will be able to maximise the utility of AI.

GS Paper 03 : Science and Technology

PYQ: (UPSC CSE (M) GS-3 2023): Introduce the concept of Artificial Intelligence (AI). How does AI help clinical diagnosis? Do you perceive any threat to privacy of the individual in the use of AI in healthcare? (150 words/10m)

UPSC Mains Practice Question: Discuss the opportunities and challenges of integrating Artificial Intelligence into India's military for modernizing its defence capabilities. (150 Words /10 marks)

Context :

- ▶ India is integrating AI into its military, focusing on modernization, but faces challenges in funding, policy, and interoperability.

India's Progress in Military AI Development

▶ Increasing Focus on AI for Defence Modernisation

- India is advancing its military capabilities by integrating Artificial Intelligence (AI) systems into its defence framework.
- The Defence Budget for 2023-24 was ₹6.21 lakh crore (\$75 billion), emphasizing modernization and upgrading of military systems.
- Innovative products like the Indrajaal autonomous drone security system have been developed.
- Significant foreign investments, such as Microsoft's \$3 billion commitment to building data centres in Telangana, bolster India's AI ecosystem.

▶ Government's Commitment to AI in Defence

- Defence Minister Rajnath Singh has emphasized AI's potential for revolutionizing military operations, from predictive analytics to autonomous decision-making.
- India participates in multiple international AI initiatives, reflecting its commitment to leveraging AI for defence purposes.
- Although progress is evident, certain hurdles need to be addressed for efficient AI adoption.

Challenges in Adopting Military AI

▶ Funding and Infrastructure Limitations

- AI development requires extensive digitized data and expensive data centres, which pose a challenge for India.
- India's military also needs to allocate resources for replacing outdated legacy systems, further straining the budget.
- Legacy hardware like older aircraft is no longer competitive globally and requires modernization.

▶ Policy Gaps and Fragmentation

- India's AI policies lack clear implementation mechanisms for military use.
- Documents such as the National Strategy for Artificial Intelligence and the Responsible AI for All paper provide guidelines but are not specific to military AI deployment.
- Institutions like the Defence Artificial Intelligence Council (DAIC) and the Defence AI Project Agency (DAIPA) have been established but lack updated publicly available progress reports.

➔ **The International AI Race**

- Countries like Israel and China are rapidly developing and deploying military AI, placing them ahead of India.
- India needs a clearer vision and faster implementation to remain competitive in the global AI race.
- Cautionary remarks from leaders, such as comparing AI to nuclear weapons, highlight apprehensions about its potential dangers.

Specific Challenges in India

➔ **Inter-Service Silos in Armed Forces**

- The separate doctrines and communication systems of the Indian Army, Navy, and Air Force hinder interoperability and joint operations.
- Reliance on Public Sector Units (PSUs)
- India's defence sector has historically depended on PSUs, despite the presence of private players and startups producing high-quality systems.
- Introducing public-private partnerships (PPPs) and fostering competition, as seen in the space sector, could accelerate AI innovation.

Path Forward for AI in Defence

- India needs systemic changes to address inter-service silos and reduce overreliance on PSUs.
- Strong frameworks and clear policies are essential for the ethical and effective deployment of military AI.
- International collaboration and fostering innovation through PPPs will enhance AI adoption and capabilities.
- With a cohesive strategy, India can harness AI's potential to revolutionize its defence ecosystem.